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## **Nortel Networks i2004 Internet Telephone & Internet Telephony Gateway (ITG) 2.0 Line Card**

Nortel Networks is pleased to introduce the latest addition to a progressive portfolio of desktop communications solutions: The i2004 Internet Telephone and Internet Telephony Gateway (ITG) 2.0 Line Card together deliver the values of Internet Telephony to the desktop. Based on an open, standards-based High Performance Network Architecture, the i2004 capitalizes on the convergence of voice and data networks to bring quality of service, reliability, simplified management, a rich telephony feature set and the potential to access a wide variety of productivity enhancing next generation applications to a customer's fingertips.

As a cross-platform product, the i2004 Internet Telephone will equally leverage the comprehensive voice features and business communications services of the Meridian 1, Meridian SL-100, Business Communications Manager 2.5, and Succession for Enterprise and Carrier platforms.

The i2004 is an Internet Protocol desktop solution that connects directly to the Local Area Network, while providing users a familiar interface to both traditional digital telephony features as well as advanced application services. In a Meridian 1 enterprise environment, the i2004 in conjunction with the ITG 2.0 Line card translates voice into data packets for high quality voice transmission over an IP network. Together, these solutions offer a path to a truly converged network that will ultimately simplify management, reduce facility costs, and position an enterprise to take advantage of a host of emerging business application opportunities.

This bulletin contains the following information on i2004 and ITG 2.0 Line-side for Meridian 1:

- Product Description
- Positioning & Benefits
- Competitive Landscape
- Packaging and Order Code Information
- Product Availability
- Training
- Sales Collateral and Documentation

- Technical Specifications
- Frequently Asked Question (FAQs)

## **i2004 Product Description**

The i2004 Internet Telephone is the newest member of the Succession Internet Telephony portfolio. As an IP communications device, the i2004 connects directly to a customer's LAN via a 10/100BaseT Ethernet connection and translates voice into data packets for transport over the data network. The i2004 currently uses a simple stimulus protocol (UNISim) that is similar to Megaco to signal between the set and the Internet Telephony Gateway line card. With a flexible architectural design that supports software downloads, the i2004 will also easily support other Voice over IP signaling methods as they become standardized.

The primary components of the i2004 solution when implemented on a Meridian 1 system include the 24 port ITG 2.0 Line Card, the i2004 Internet Telephone Boxed Option with a 117/120VAC 50/60 Hz Power Supply, and the Internet Telephone ISM Software Parameter. In addition, the i2004 requires x11 Release 25.30 software or later and either the Meridian Administration Tool (MAT 6.67) or Optivity Telephony Manager (OTM 1.0 or later) for operation, administration and maintenance. An optional customer-provided Dynamic Host Control Protocol (DHCP) server may also be used for dynamic IP addressing although manual IP configuration is also possible using the i2004 dial-pad.

### **i2004 Features**

For intuitive ease of use, the i2004 provides end-users a professional IP-based desktop solution with a familiar interface and feature set. The i2004 will support the robust feature set of whichever specific Nortel Networks communications platform it is running on. On Meridian 1 systems, i2004 will initially support the full Meridian 1 digital telephone feature set currently available on the M2616 series telephone.

From a physical perspective, the i2004 Internet Telephone will look very similar to the sleek design of the M3904 digital Telephone. Leveraging one of the most dramatic enhancements within the M3900 series portfolio, the i2004 contributes to lower total cost of ownership through the elimination of paper labeled key caps. Line and feature keys are conveniently "self-labeled", meaning that once the phone is configured within the system, the line and feature key labels are automatically presented to the user through the display. Not only does this significantly reduce the initial installation and designation time, it also reduces ongoing maintenance charges associated with set re-designation when programming changes occur or new features are added. In addition, Moves, Adds, & Changes are further simplified with i2004, as it is not necessary to physically connect the telephone back to a specific hardware port on a line card.

The i2004 will deliver the following key features:

- Large Multi-line 5x24-character LCD display
- 6 user-programmable line/feature keys
- 4 user-programmable soft feature keys that provide access to multiple features
- Integrated headset jack with convenient on/off button
- Dedicated Icon Labeled feature keys: Hold, Release, Volume Control, "Smart Mute", Headset with LED, Messages, Services
- *\* Additional advanced application keys are also dedicated for future use: Directory, Expand, Quit, Copy.*
- Full Duplex Audio
- Handsfree Speakerphone with LED
- Voice Activity detection, silence suppression, and echo cancellation
- Automatic IP address assignment via DHCP
- Dual Purpose LED Indicator: Message Waiting (Solid), Incoming Call (Flashing)
- Navigation Cluster (for viewing display screen)
- Integrated accessory bay (for future accessory modules including an Internet Telephone Switch module)



Illustration: i2004 Internet Telephone

There are however, certain M3900 series enhancement features that are not currently supported in the initial phase of the i2004 release. As with the M3900 series, the i2004 Internet Telephones will continuously be enhanced to include new features and capabilities in future releases.

Specific M3094 features not currently available on i2004 include:

- Personal Directory
- Call Log & Redial List
- Expansion Modules
- Accessory modules
- User customizable feature keys
- Live dial pad
- Group Listening
- Wall mount kit
- Shift key for six additional feature keys
- Set to set messaging
- Hot desking
- Context sensitive soft keys
- DN Based Distinctive Ringing
- Virtual Office

## **Internet Telephony Gateway (ITG) 2.0 Line Card**

The ITG 2.0 Line Card is a dual slot Intelligent Peripheral Equipment (IPE) card designed for Meridian 1 systems to support the i2004 Internet Telephone. On each ITG 2.0 Line card, there is one 10BaseT Ethernet interface connecting the IP Line card to the private LAN (ELAN) for management and one 10/100BaseT Ethernet interface connecting the IP Line card to the IP network for voice transmission (TLAN). Each card is equipped with 24 DSP ports and performs two primary functions:

The ITG 2.0 Line Card provides gateway functionality to facilitate the conversion of voice streams between the packet switched IP data network and the circuit switched PBX network.

In addition, the ITG 2.0 Line card acts as a Terminal Proxy Server or "virtual line card" for the i2004. In this capacity the ITG 2.0 Line card is responsible for registering i2004 sets and keeping track of the maximum number of sets that can be registered per card. Utilizing the

Meridian Virtual Terminal Number (VTN) software feature, the ITG 2.0 Line card has the capacity to register up to 96 i2004 telephones per card. The concentration of sets is achieved through the use of Virtual Superloops within the Meridian 1 which are a hybrid of real and PBX phantom superloops.

Virtual superloops use a time slot map to handle i2004 to i2004 calls. These types of calls do not require the use of a physical port on the ITG card to define or enable a speech path. In an i2004 to i2004 call scenario, the IP sets transmit and receive voice packets between each other directly over the IP network without using a DSP port on the ITG 2.0 Line Card.

However, calls made between an i2004 set and a traditional telephone (digital set, public telephone network, etc.), will require the dynamic allocation of a physical port on an ITG 2.0 Line card. Within a Meridian 1 system, DSP ports on multiple ITG 2.0 Line cards are pooled resources allowing a port on any card to be dynamically assigned to an i2004 telephone on an as needed basis.

## **Incremental Software Management (ISM) Parameter**

The ISM parameter uses a Meridian 1 keycode to enable i2004 Internet Telephone software within the x11 Release 25 software suite. There are two ISM Parameter types, one for large Meridian 1 systems Options 51C-81C (NTZC82AA) and one for 11C and 11C Mini systems (NTZC84AA). One ISM parameter must be purchased for each i2004 Internet Telephone supported on a Meridian 1 system. The ISM Parameter is listed in the Meridian 1 Product Catalog.

## ***QoS and Bandwidth Management***

The ITG 2.0 Line card supports a range of compression algorithm standards including G.711, G.729, and G.729AB. These compression levels are configurable by the system administrator using either MAT or OTM to more efficiently manage quality of service and bandwidth usage. Each i2004 Internet Telephone and ITG port can also be assigned a bandwidth management zone by the system administrator to avoid quality degradation due to insufficient bandwidth for active connections.

In addition, the i2004 and ITG 2.0 Line card support standards-based Quality of Service (QoS) with IP Type of Service (TOS) and IETF-defined Differentiated Services (DiffServ), allowing organizations to prioritize and expedite both voice and data traffic on the LAN and ensure clear voice communications throughout the enterprise. Within the ITG 2.0 Line Card NTP, detailed Engineering Guidelines are available to assist administrators with effectively evaluating the network to manage such QoS impacting elements as end-to-end packet delay, and end-to-end packet loss.

## Operation, Administration & Maintenance

Management for Meridian ITG 2.0 Line card and the i2004 Internet Telephone is provided with the Meridian Administration Tools (MAT 6.67 or above) or the Optivity Telephony Manager (OTM 1.0 or above). Customers may wish to add the MAT Alarm Management application to their portfolio of applications if they wish to capture SNMP alarm traps and take advantage of MAT's Alarm Notification capabilities.

For more information and order codes for MAT 6.67 or OTM 1.0, please refer to MAT/OTM specific documentation and General Release Bulletins.

## Product Positioning & Benefits

The i2004 is an ideal solution for any enterprise, wanting to take advantage of the benefits that a converged voice and data network has to offer, while leveraging their existing communications investments. The i2004 and Meridian ITG 2.0 Line Card represent key elements of a Meridian Internet Enabled solution, providing enterprise businesses with a logical and realistic way of deploying IP telephony to save money and improve efficiency without sacrificing quality or convenience. Further, only the i2004 Internet Telephone can be used across circuit switched or server based communications platforms, allowing customers the ability to migrate towards IP Telephony at their own pace.

Delivering feature transparency with Nortel Networks popular M2616 digital telephone, the i2004 offers a cost-effective alternative to traditional digital telephones. It is geared towards environments with a mobile workforce, wanting to benefit from the cost savings and simplification of smoother moves, adds, and changes, and wanting the flexibility to enable innovative new productivity applications and web based services via the i2004 as these services emerge.

The i2004 and Meridian ITG 2.0 Line Card offer the following benefits:

- ***Simplified administration:*** One of the leading drivers for deploying Internet telephones is the simplification of the moves, adds, and changes process. Often administratively intensive, traditional voice networking involves static configuration and time consuming operations, maintenance and administrative procedures. With the increasing mobility of today's workforce, the i2004 offers a very flexible solution for handling station adds, moves and changes due to dynamic addressing. With a standard DHCP server the i2004 allows users to move their i2004 set, retaining the "identity" of the set and reconnect to the network anywhere and anytime without administrative involvement, allowing system administrators to concentrate on more complex mission critical responsibilities.
- ***Robust feature set and access to innovative applications:*** The i2004 provides users access to the full range of M2000 desktop features and functionality. Unlike other IP phone solutions, the i2004 does not limit users to a basic call feature set when adopting IP telephony, thus allowing productivity levels to continue uninterrupted. i2004 users gain access

to the rich integrated applications suite supported by Meridian 1 including unified messaging with CallPilot, Meridian Mail and Symposium Call Center. In addition, as an IP addressable network device, the i2004 potentially provides the opportunity for users to access new innovative server-based applications on the network from their Internet telephone. For instance, a bank teller could potentially access a customer's account information from the i2004 LCD screen and provide more efficient customer service.

- ***Incremental migration to IP Telephony:*** The i2004 allows customers to choose their own pace for Internet Telephony adoption. With the Meridian ITG 2.0 Line Card, customers wanting to maintain the reliability and robustness that comes with a Meridian 1 system can still incrementally implement IP Telephony elements into their network. The i2004 is a state-of-the-art Internet Telephone that plugs directly into the LAN delivering voice feature transparency to the desktop. In addition, the i2004 offers scalability on any Meridian 1 system of up to 96 i2004 users per single ITG 2.0 Line card.
- ***Investment protection across multiple platforms:*** Whether an enterprise is enhancing a circuit switched Meridian 1 network to leverage IP or transforming an IP network to provide telephony services and applications with the Succession Call Server for Enterprise, the i2004 Internet Telephone offers investment protection across platforms. Customers are able to maintain familiarity with their existing desktop device as they move forward in their adoption of IP Telephony technology.

## Competition

A number of Internet Telephone solutions have recently been introduced into the converged voice and data market, representing the "next-generation" of telephony desktop devices. However only Nortel Networks blends feature-rich voice processing with proven high reliability and the flexibility to deploy the same i2004 Internet Telephone across multiple portfolio platforms, continuing our commitment to investment protection. The majority of Internet Telephones available today requires a server based call manager and deliver only basic telephony features. The i2004 can be seamlessly deployed over Nortel Networks Meridian 1, Meridian SL-100, Business Communications Manager or Succession Call Server for Enterprise, leveraging the comprehensive feature suite of each platform. This level of flexibility allows a graceful and economical migration pathway to Internet Telephony.

The following matrix compares the attributes of the Cisco 7960, Siemens HiNet LP5100 and 3Com NBX 100 Internet Telephones with Nortel Networks' i2004 Internet Telephone. Each of these vendors have delivered an early market internet telephone product however, these sets, while generating early interest in IP Telephones do not offer the same range of features and functionality breadth as the i2004.

## Competitive Matrix

Features	Nortel i2004 on Meridian 1	Cisco 7960	Siemens HiNet LP 5100	3COM NBX 100
# Programmable Line/Feature Keys	6 Self-Labeling	6	16	18
# Soft Feature Keys	4 Self-Labeling	4 ( <i>*Hold uses one</i> )	N/A	3
Specialized Fixed Keys	Headset, Directory, Inbox, Outbox, Services, Expand, Hold, Goodbye, Handsfree, Smart Mute, Copy, Quit	Headset, Directory, Messages, Services, Settings, Information, Speaker, Mute	Navigation, Handsfree, Select	Conference Transfer, Redial, Hold, Speaker Mute, Messages, Navigation
Call Feature Set	M2616 feature set	Basic	Basic; Conferencing not supported	Basic
LCD Display	5 Lines x 24 Char	5 Lines x 24 Char	2 Lines x 24 Char	2 Lines x 16 Char
Speakerphone	Yes	Yes ( <i>No smart mute; Noted problems</i> )	Yes	Yes
Hearing Aid Compatible	Yes	Yes	Yes	Yes
Downloadable Software Updates	Yes	Yes	Yes	Yes
DHCP Support	DHCP or Static	DHCP or Static	DHCP or Static	DHCP or Static
Voice Codecs Supported	G.711, G.729A, G.729AB	G.711, G.729A	G.711(adapted ver.), G.723.1	G.711, G.726
Voice Activity Detection, Echo Cancellation, Silence Suppression	Yes	Yes	Yes	Yes
Ethernet Connection	10/100 Base-T; Internet Telephone Switch Module	10/100 Base T; 2RJ45 ports Layer 2 switch	10 Base T; <i>Mini Hub TBA</i>	10 Base-T; 2RJ45 ports Layer 2 switch
Power Supply	110V Local Power; Inline Power Patch Panel	120V Local Power Inline Power Patch Panel	110V Local Power	110V Local Power; Inline Power Adapter Kit
Call Detail Reporting (CDR)	Yes	Yes	Yes	Yes
Voicemail	Yes	Yes	Limited, no storage	Yes
Management Interfaces	Web-based; MAT/OTM	Web-based	Web-based; Telnet, SNMP, FTP	Web-based; Telnet
Accessory Bay for future support of accessory modules	Yes	No	No	No
<b>Portfolio Solutions:</b>	----	----	----	----
Software Phone	IP Telecommuter; i2050 (planned '01)	Yes	Yes	Yes
Low End Phone	planned	7910	LP 2100	N/A
<b>Price (Set price only)</b>	----	----	----	----
List Price	\$338	\$495	\$425	\$360

*\*Information from company websites, Business Communications Review - Jan. 2000,*



## Product Ordering Information

The ITG 2.0 Line Card and ISM Software Parameters are included in the July 17, 2000 *Meridian 1 Product Catalog* for US and Canada. As a cross platform product, the i2004 Internet Telephone is included under the "Restricted" price list in the "Internet Telephone" section of the August 1, 2000 Enterprise Data Catalog CD-ROM. The Enterprise Data Catalog is accessible to all Nortel Networks Authorized Distributors and Business Partners and will be included on the same CD-ROM as the Meridian 1 Product Catalog scheduled for October 2000 distribution. Meridian 1 Distributors may also download the Enterprise Data Catalog from the Partner Business Center website at <http://www.nortelnetworks.com/partnercenter>. Within the Internet Telephones section of the Data Catalog a "Category P" (40%) distributor pricing discount structure will apply to Internet Telephone solutions.

## Packaging/Order Codes

The Meridian ITG 2.0 Line Card System package, ISM Software Parameter, Merchandise and associated Documentation are available in the U.S and Canadian Meridian 1 Product Catalogs using the order codes listed below.

Order Code	CPC Code	Package Contents	Description
NTZC81AA	A0804146	NTZC80AA NTDW80AA NTCW84JA NTMF94EA NTDW81AA NTAG81CA P0910804	<b>Meridian IP Telephony Gateway Line 2.0 System Package:</b> <ul style="list-style-type: none"><li>- Meridian ITG 2.0 Line Card</li><li>- Meridian ITG 2.0 Line Card S/W CD ROM</li><li>- M1 100 MB I/O Backplane Filter</li><li>- ELAN/TLAN/RS232 Ports Cable</li><li>- M1 ITG 2.0 Line Card NTP CD ROM</li><li>- PC Maintenance Cable</li><li>- i2004 User Guide (Qty 24)</li></ul>
NTZC82AA	A0804340		Internet Telephone Software Parameter (ISM) - Large System
NTZC84AA	A0808998		Internet Telephone Software Parameter (ISM) - Small System

Merchandise Items	CPC Code		Description
NTDW80AA	A0804147		Meridian ITG 2.0 Line Card S/W CD ROM
NTCW84JA	A0783483		M1 100 MB I/O Backplane Filter
NTAG81CA	A0655007		PC Maintenance Cable
NTMF94EA	A0783470		ELAN, TLAN, RS232 Ports Cable
NTDW81AA	A0806119		Meridian ITG Line 2.0 NTP CD ROM
P0910806	P0910806		Meridian ITG 2.0 Line Card NTP - Paper
P0910804	P0910804		i2004 Internet Telephone Users Guide (single)
NTZC80AA	A0804145		ITG 2.0 Line Card Spare

The i2004 Internet Telephone Boxed Package with Power Supply is available in the Nortel Networks Enterprise Solutions Data Product Catalog using the order codes listed below. *Note: An i2004 Internet Telephone Boxed Package without Power Supply is available for International markets only.*

Order Code	CPC Code	Contents	Description
NTEX00BA	B0253074	NTEX00AA NTEX0080 A0648375 A0619627 A0788874 A0788682 P0886045	<b>i2004 Internet Telephone Boxed Package</b>  - i2004 Internet Telephone (Ether Gray) - i2004 Installation Guide - 7 ft. Ethernet Cable; Category 5 - Power Transformer (117/120 VAC 50/60 HZ) - i2004 Telephone Handset (Ether Gray) - i2004 Telephone Handset Cord (Ether Gray) - i2004 Telephone Footstand (Ether Gray)

Merchandise Items	CPC Code		Description
	A0619627		Power Transformer (117/120 VAC 50/60 Hz)
	A0788874		Telephone Handset (Ether Gray)
	A0788682		Telephone Handset Cord (Ether Gray)
	A0648375		7ft. Ethernet Cable, Category 5
	P0886045		Telephone Footstand (Ether Gray)

## **Order Code Description**

### **NTZC81AA – Meridian Internet Telephony Gateway (ITG) 2.0 Line Card System Package**

This package includes the major Internet Telephony Gateway components required to support the i2004 Internet Telephone for Meridian 1 Option 11C, 11C Mini, 51C, 61C, 81 or 81C systems: one 24-port ITG 2.0 Line Card (NTZC80AA), one ITG 2.0 Line Card S/W CD ROM (NTDW80AA) loaded with the ITG Line 2.0 application and i2004 Internet telephone firmware, one Meridian Backplane to 50 pin I/O Panel Mounting Connector (NTCW84JA), one PC Maintenance Cable (NTAG81CA), an ELAN, TLAN, RS232 Ports Cable (NTMF94EA), one ITG 2.0 Line Card NTP on CD ROM (NTDW81AA), twenty four (24) i2004 Internet Telephone User Guides (P0910804). The i2004 desktop device for the Meridian ITG 2.0 Line Card must be purchased separately from the Enterprise Solutions Data Catalog.

### **NTZC82AA – Internet Telephone Software Management (ISM) Parameter for Large Systems**

The ISM Parameter uses the existing Meridian 1 keycode to enable i2004 Internet Telephone software within the X11 Release 25 Software suite. One NTZC82AA ISM parameter must be purchased for each i2004 Internet Telephone supported by a Meridian 1 Option 51C, 61C, 81 or 81C system.

### **NTZC84AA – Internet Telephone Software Management (ISM) Parameter for Small Systems**

The ISM Parameter uses the existing Meridian 1 keycode to enable i2004 Internet Telephone software within the X11 Release 25 Software suite. One NTZC84AA ISM parameter must be purchased for each i2004 Internet Telephone supported by a Meridian 1 Option 11C or 11C Mini system.

### **NTEX00BA – i2004 Internet Telephone Boxed Option with Power Supply**

This package includes the major components to support the i2004 Internet telephone including: one i2004 Internet Telephone Base (NTEX00AA), one Telephone Handset (A0788874), one Telephone Handset Cord (A0788682), one Telephone Footstand (P0886045), one 7ft. Category 5 Ethernet Cable (A0648375), one i2004 Installation Guide (NTEX0080).

## **Merchandise Items**

### **NTAG81CA - PC Maintenance Cable**

This cable is required to connect a PC or Terminal to the ITG card via the maintenance port connector on the faceplate for the purposes of administering the pack. Cable length is 3 meters. This cable can be connected directly to the 9-pin D-type RS232 input on a standard PC.

### **NTMF94EA - ELAN, TLAN, RS232 Ports Cabling**

This cable is required to connect between the I/O connector on Option 11 or large systems and the Ethernet Management port, Telephony LAN port and RS232 maintenance port. On large systems, the NT8D81AA cable is used to bring all backplane pairs to the I/O panel.

### **NTCW84JA Meridian 1 100MB I/O Backplane Filter**

This filter is required if the ITG 2.0 Line card is installed on a Large System and the TLAN interface is run at 100 BaseT. Its function is to remove the capacity filtering that is inherent in the normal I/O panel filter of large systems.

### **NTZC80AA – Meridian ITG 2.0 Line Card - Spare**

The ITG 2.0 Line Card - Spare is a single 2-slot IPE card with no software security device. This card is to be ordered for ITG 2.0 Line Card field replacement purposes only. Activation can only be achieved by using the security device from the originally purchased IP Line Card in the Meridian ITG 2.0 Line Card assembly packages.

### **P091080 – Meridian ITG 2.0 Line Card NTP - Paper**

The Meridian ITG 2.0 Line Card NTP describes the application's features and functions and contains engineering guidelines. In addition, the NTP provides the step-by-step procedures to install, operate, and maintain the application. A CD ROM version of the NTP is included in the Meridian ITG 2.0 Line Card assembly package; this hard copy version is an optional, orderable item.

### **NTDW81AA – Meridian ITG 2.0 Line Card NTP CD ROM**

Same as P091080 (above) but on CD ROM media. One NTP CD ROM is included in the Meridian ITG 2.0 Line Card assembly package. This order code can be used to order additional NTP CD ROMs.

### **NTDW80AA - Meridian ITG 2.0 Line Card Software CD ROM**

There are two methods for up-issuing the software on the ITG 2.0 Line Card: Download from the Meridian 1 Electronic Software Distribution (M1ESD) website at <http://www.nortelnetworks.com/servsup/esd/meridian1/> or order the Meridian ITG 2.0 Line Card Software CD-ROM.

### **NTLH45AA - i2004 User Guides**

The i2004 User Guide provides a description of i2004 Internet Telephone features and controls. The guide provides step-by-step instructions to users on how to customize and activate the set's features.

## **Product Availability**

The i2004 Internet Telephone, Meridian Internet Telephony Gateway (ITG) 2.0 Line Card System Package and ISM Parameters will be available for Meridian 1 systems in February 2001. For a period of approximately three months from General Availability, an installation checklist must be completed and submitted with each order. Please visit the following location to obtain a copy of the form:

<http://www.nortelnetworks.com/partnercenter>

Select PBC Login (ID and Password required)

Select "North America"

Under Programs Select "Programs"

Select "Global Commercial Operations"

Select "Configuration Bulletins" and then "ITG LS i2004"

The i2004 Internet Telephone is included in the August 1, 2000 Enterprise Data Catalog. The Meridian Internet Telephony Gateway (ITG) 2.0 Line Card System Package and ISM Parameters are included in the July 17, 2000 Meridian 1 Product Catalog for US and Canada.

## Training

Nortel Networks training partner will provide a three-day leader-led course; Global Knowledge entitled - Meridian Internet Telephony Gateway (ITG) 2.0 Line/i2004 Internet Telephone, Course # 399. Call 1-877-662- 5669 or visit <http://www.nortelnetworks.com/td> for more information.

The following topics will be covered:

- Definition of Voice over IP
- Required ITG Components
- LAN Environment required for ITG
- ITG Hardware and Software Requirements
- ITG Installation and Configuration
- ITG Operation and Maintenance
- Trouble Shooting ITG System

## Support

The Nortel Networks North American Global Customer Care organization (formerly known as CTAS/ETAS/CTS) will provide support services for Meridian ITG 2.0 Line Card and i2004 Internet Telephone. Global Customer Care is located in Richardson Texas and Belleville, Ontario Canada as well as in several other regional offices.

## Collateral

The following documents will be available on the Partner Business Center website at <http://www.nortelnetworks.com/partnercenter>.

- i2004 Product Brief
- ITG 2.0 Line Card Product Brief
- i2004 and ITG 2.0 Line Card Customer Presentation
- Sales & Marketing Bulletin with FAQ
- Product Bulletin
- Technical Information Services Package
- Power over LAN White Paper

## Technical Specification

Meridian 1 Compatibility:	Meridian 1 Options 11C Mini, 11C, 51C, 61C, and 81C
Line Card Port Capacity	24 ports per card; Single card supports up to 96 configured i2004 users
Max. # Line Cards per System Option 11C, 11C Mini: Options 51C - 81C	8 ITG Line Cards; Supports up to 640 i2004 users Based on CPU Real-time Capacity
Physical Location:	Meridian 1 IPE shelf, occupying 2 IPE slots
Software Requirements:	X11 Release 25.30 or later with packages 88 (Digital Set Package –DSET) and 170 (Aries Terminal Package – ARIES) enabled.
ISM Software Parameters:	One ISM Parameter must be purchased for every i2004 Internet Telephone supported by a Meridian 1 system.
System Administration:	Requires MAT 6.67 or later or OTM 1.0 or later - Alarm Management required to view SNMP alarm traps
Compression Algorithms:	G.711, G.729A, G.729AB
PCMCIA Card:	8MB capacity Flash card (optional)
Environmental Requirements:	Same as Meridian 1 equipment
Meridian 1 Interfaces:	Ethernet Voice Port, Ethernet Management Port, Serial Management Port, DS-30 Signaling, Card LAN
LAN Connectivity:	10/100 BaseT for i2004 connection to LAN; 10/100 BaseT connection for ITG card to TLAN for voice transmission; 10 Base T connection for ITG card to ELAN for administration; 10 BaseT connection from the Meridian 1 to the router (IP version 4)
Power Requirements:	16 VAC, 500 mA wall transformer for the i2004 telephone Internet Telephone Switch Module (2 RJ-45 Jacks)